WestBox: an object-oriented software component for WEST CODAC

G. Caulier, J. Colnel, N. Ravenel, B. Santraine, and the WEST Team

CEA, IRFM, F-13108 Saint Paul-lez-Durance, France.
Since 2013 => start to **re-factoring CODAC source code**.

Goals :

- Modernize legacy implementations (C / Makefiles),

- Create a framework by main features:
  Data Acquisition,
  Timing Network,
  Finite States Machines,
  Shared Memory Network,
  etc.

- Make cross-platform code (Cmake / Qt).

- Create a new component named **WestBox**:  
  Object-oriented conception (C++), 
  Integrate non native fast controller, 
  Easily support external collaborations, 
  Migrate to open technologies (Websocket, Mqtt).
WestBox client:
- Fast controller.
- Use framework features on demand,

Goals:
- Read / Write settings from database,
- Acquire Plasma discharge data,
- Receive timing network events,
- Follow pulse sequence (finite-states machine),
- Shares data for plasma discharge control,
- Write large files to database.

Extended:
- Provide local GUI (Qt),
- Integrate **Websocket** server:
  Stream acquisition,
  Stream states/events,
  Stream log-files,
- Provide remote Web interface.
Non native device:
- Integrated as remote controller (ex Labview),
- WestBox become a Websocket gateway:
  Delegate finite-states,
  Delegate database access.
- Simple XML based protocol,
- Easy to hack with web browser.

On going:
Python and EPICS controllers
Thanks for your attention